

## ON GEOMETRIC DISSECTIONS AND TRANSFORMATIONS.

By *Henry Perigal, F.R.A.S., &c.*

[Extracted from *The Messenger of Mathematics*, New Series, No. 19, 1872.]

“The present series of papers consist chiefly of notes and diagrams extracted from my note-books and sketches made during the last forty years. I have devoted much time and thought to the solution of geometric theorems and problems by dissections and transpositions: viz. in proving the equality of areas in equivalent rectangles, &c., and investigating how the figures could be best dissected, so that their component parts might be fitted together in either form; and I have often contemplated proving all the suitable Theorems and Problems in Euclid by such dissections and transpositions: so as to render them self-evident by ocular demonstration. I worked on paper ruled all over in small squares, which I found useful in facilitating dissections; and I have always had a fancy that the ancient Egyptians and early Greek geometers adopted some such expedient in their geometrical researches. So that I deem it probable that the property of the right-angled triangle may have been discovered by similar means; and the solution I hit upon forty years ago was perhaps the very one discovered forty centuries ago, and re-discovered by Pythagoras nearly twenty centuries afterwards; and not unlikely, as was also the case with me, in the endeavour to find geometrically a square demonstrably equal in area to a circle by dissection and transposition.”

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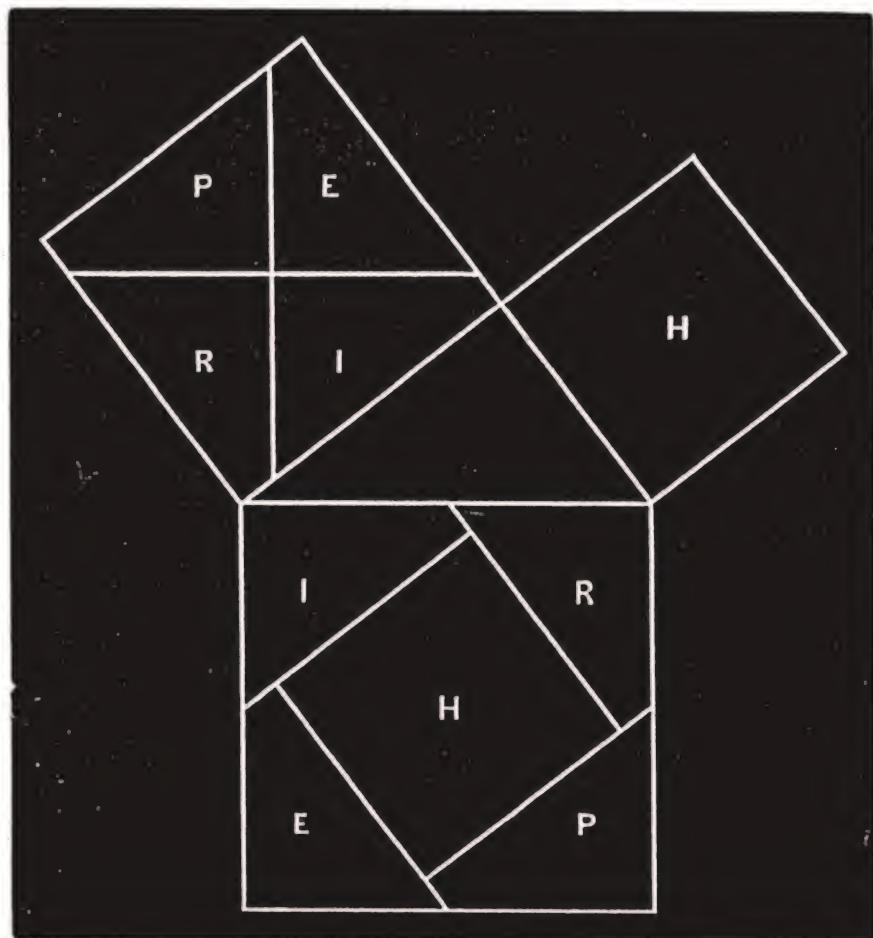
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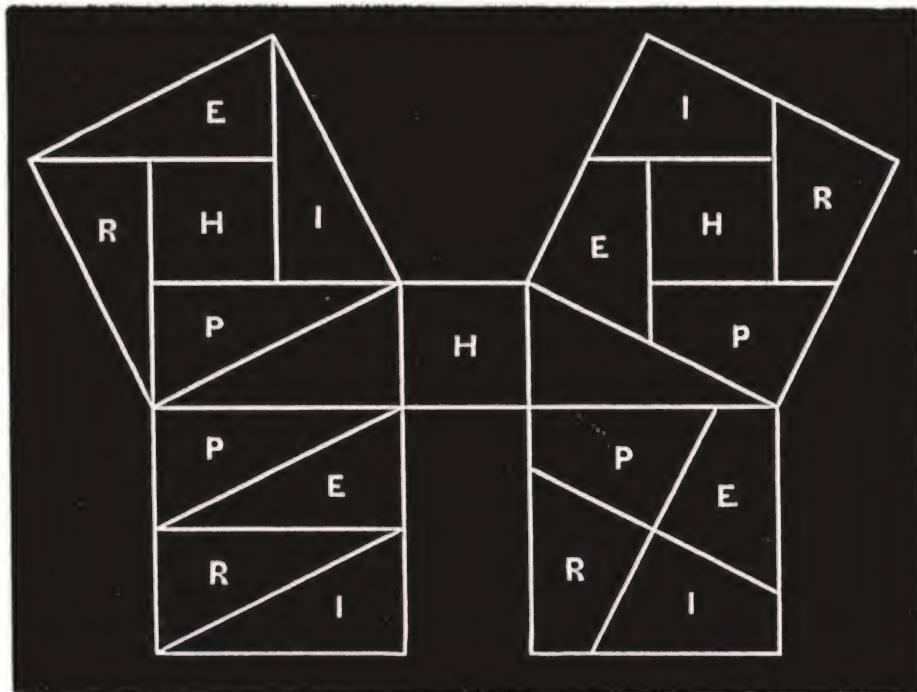
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GEOMETRIC DISSECTIONS  
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TRANSPOSITIONS.

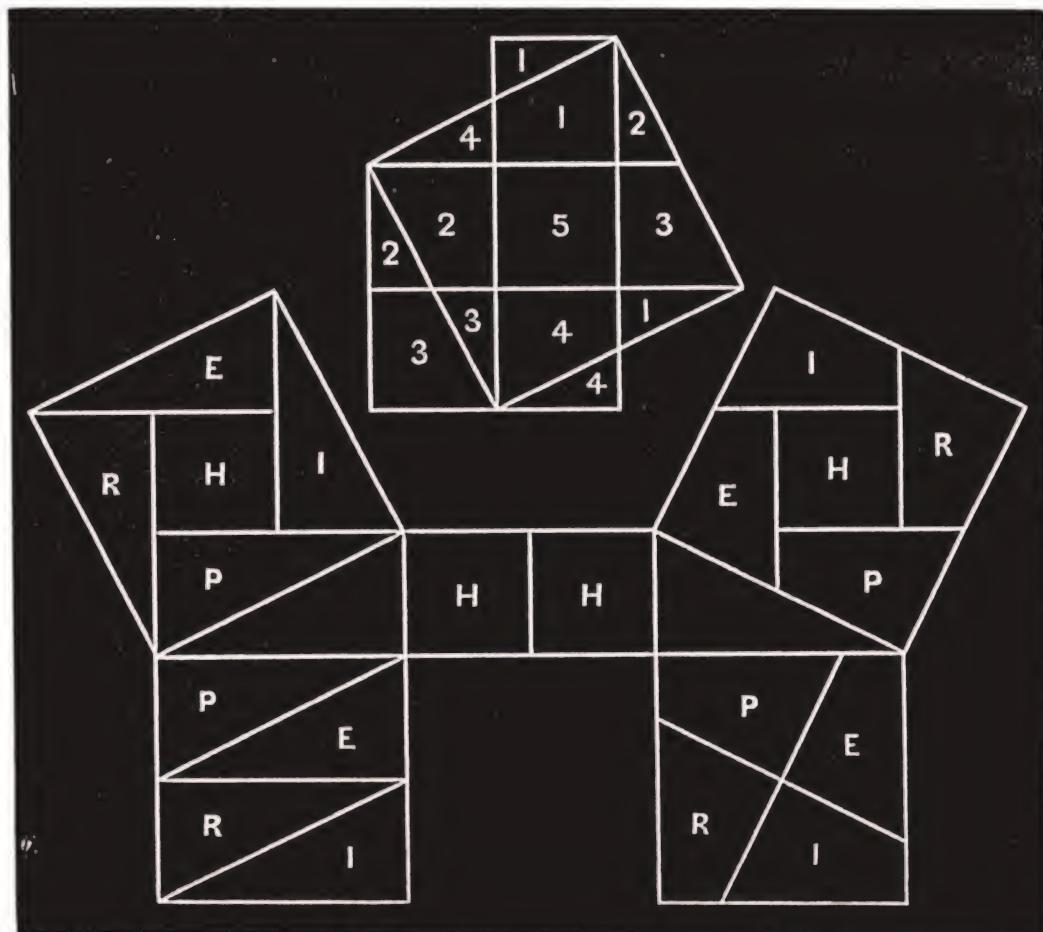
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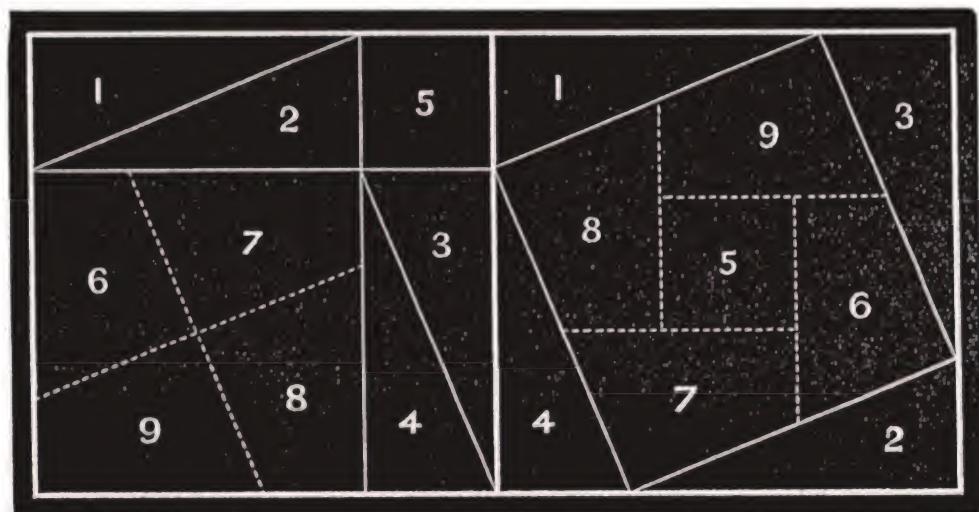
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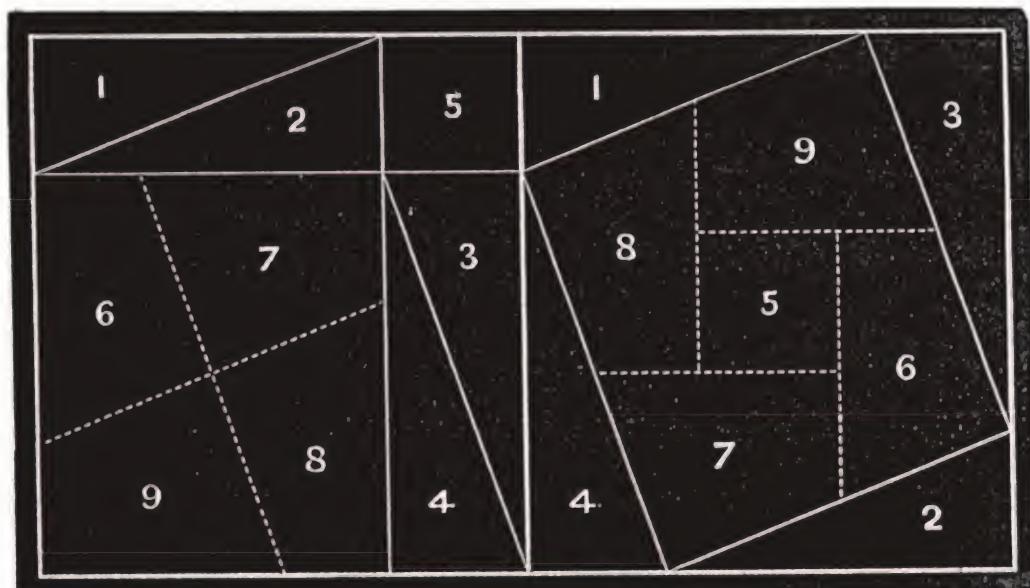
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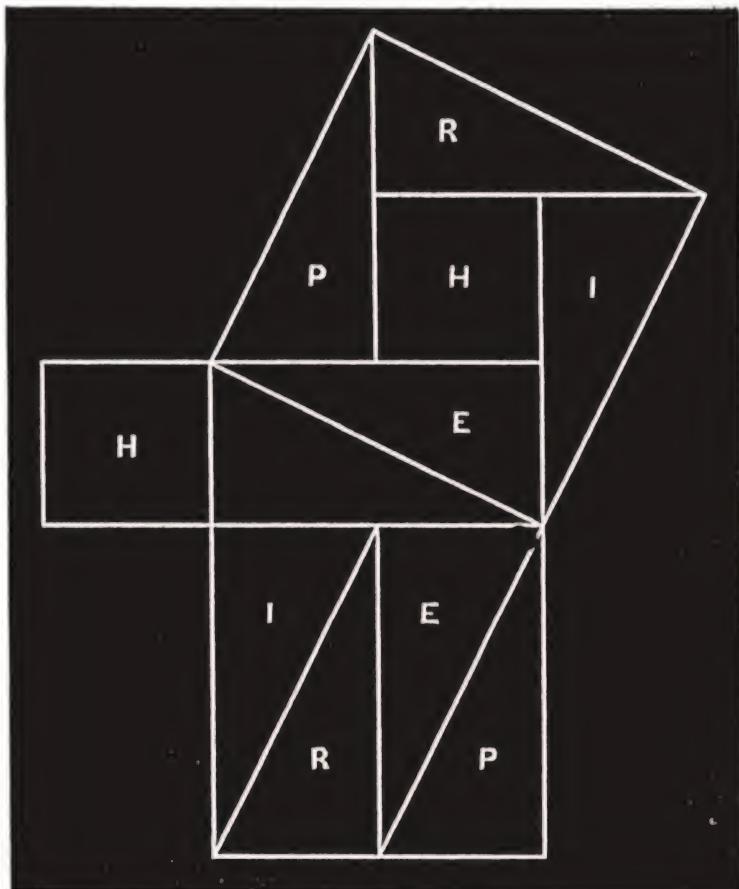
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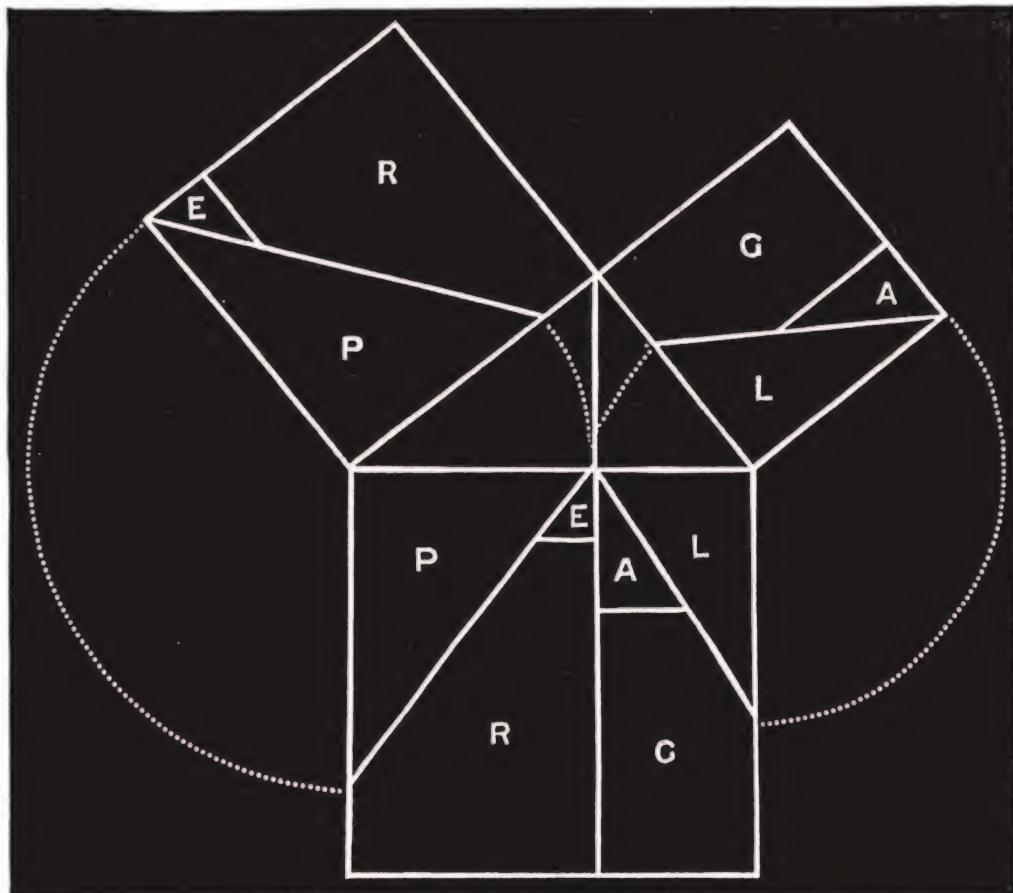
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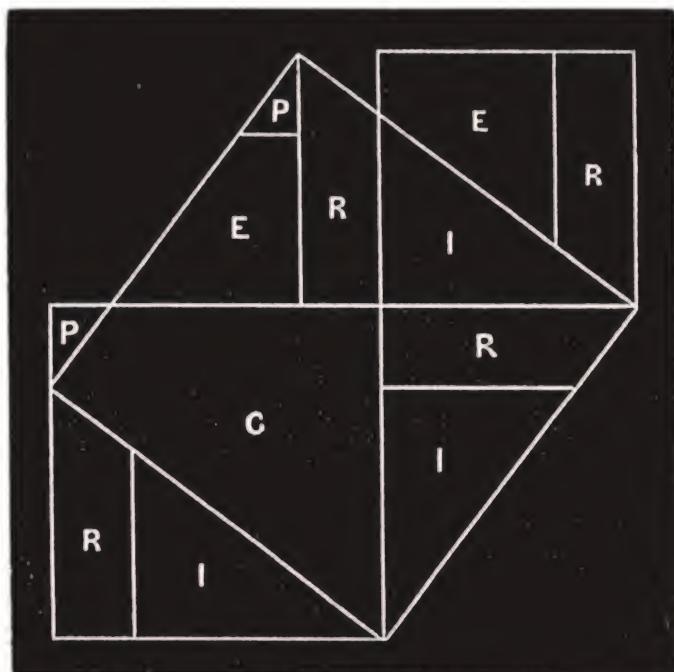
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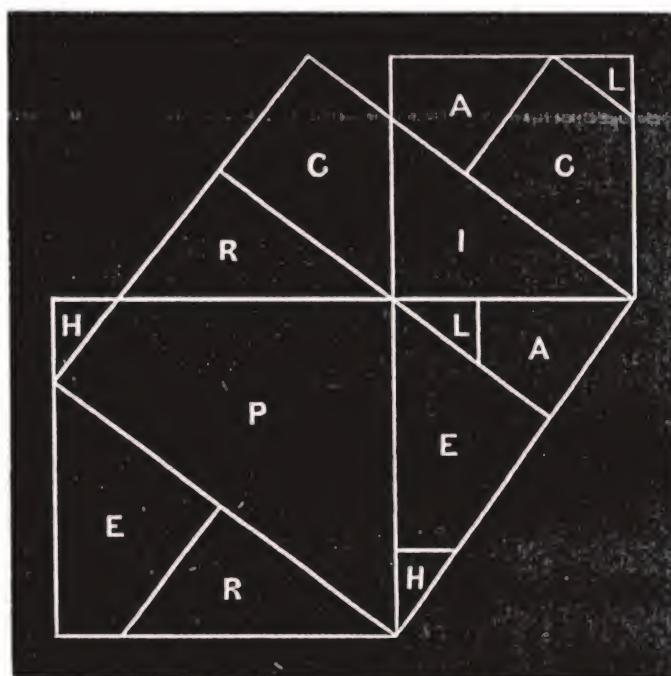
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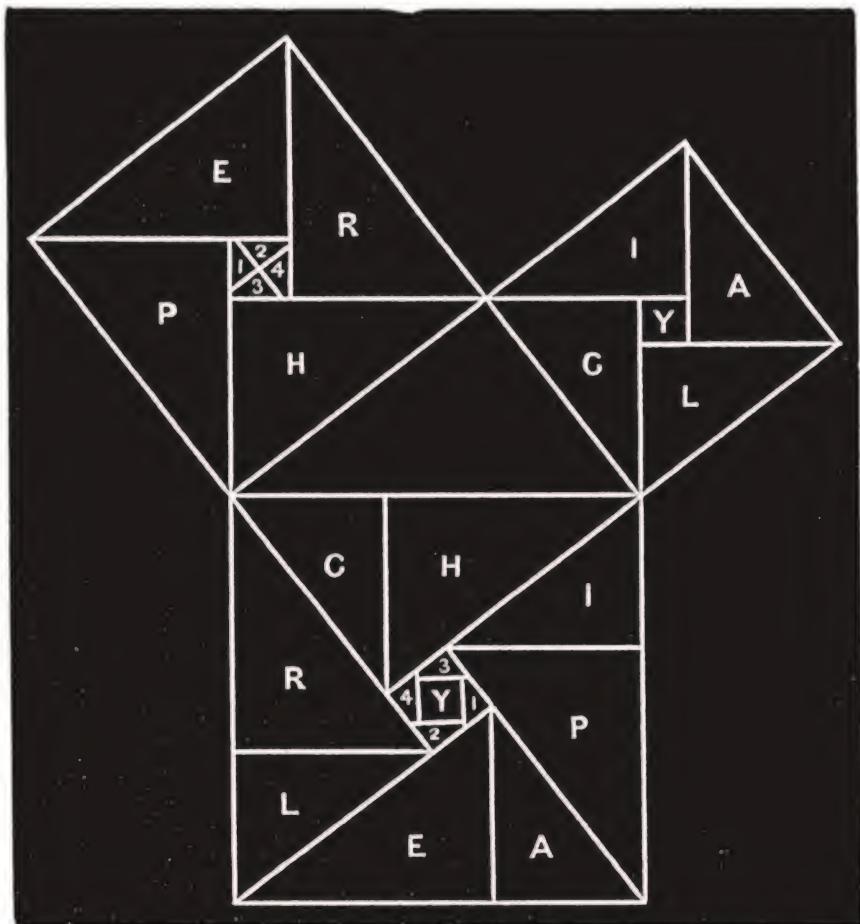
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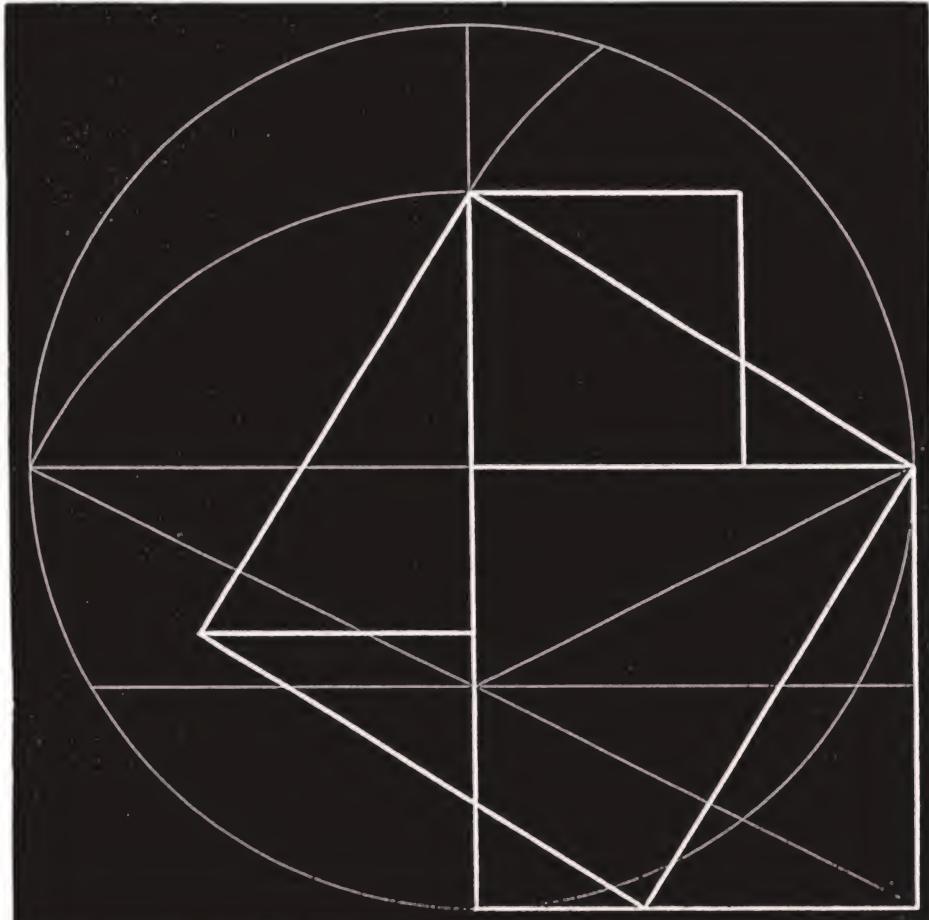
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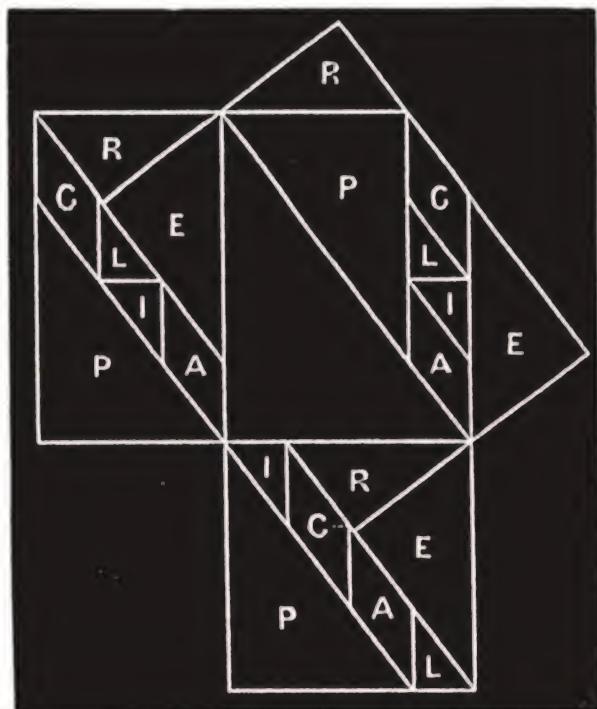
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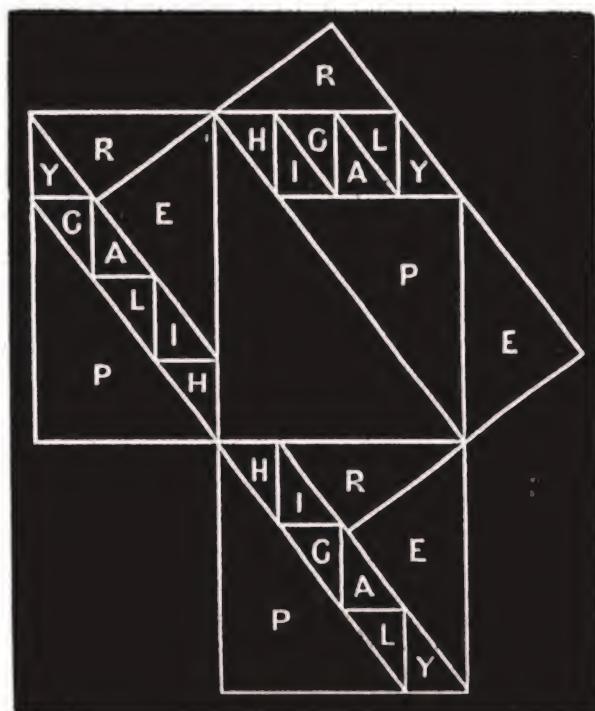
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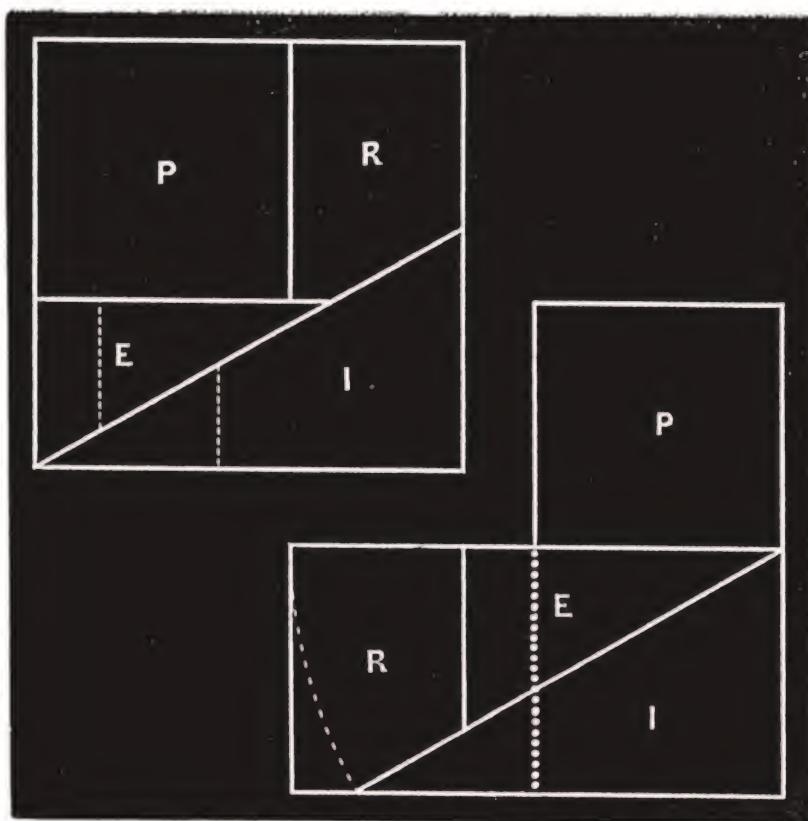
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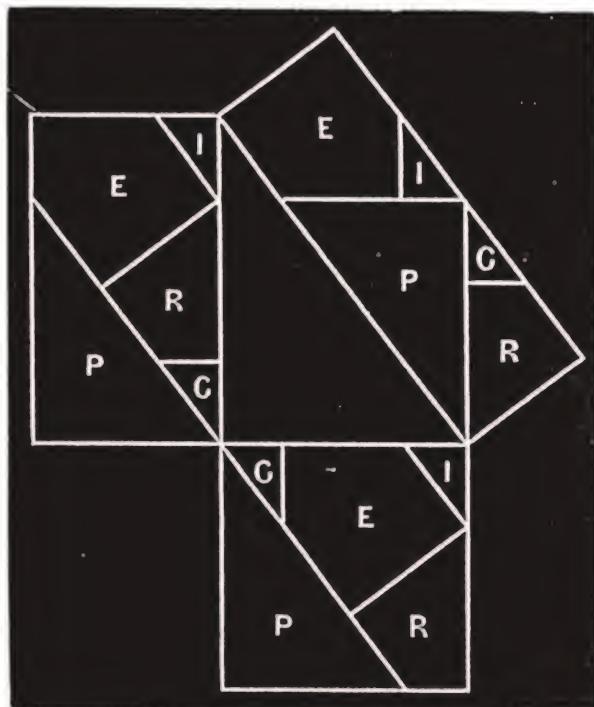
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